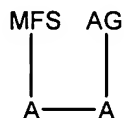


We claim:

1. A method of modifying a metallic surface comprising contacting the metallic surface with an asymmetric monolayer forming species having the formula:



10 wherein

A is an attachment linker moiety;

MFS is a monolayer forming species; and

AG is an electroconduit forming species.

2. A method according to claim 1 further comprising contacting said metallic surface with a biological species having the formula:

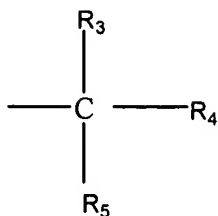
A-MFS-capture binding ligand

wherein

A is an attachment linker; and

MFS is a monolayer forming species.

3. A method according to claim 2 wherein said capture binding ligand is a nucleic acid.
4. A method according to claim 2 wherein said capture binding ligand is a protein.
5. A method according to claim 1 wherein A is sulfur.
6. A method according to claim 1 wherein said metallic surface is gold.
7. A method according to claim 1 wherein said MFS is an insulator.
8. A method according to claim 7 wherein said insulator comprises an alkyl group from about 7 to 20 carbons.
9. A method according to claim 8 wherein said alkyl group comprises a heteroalkyl.
10. A method according to claim 8 wherein said alkyl group comprises a substituted alkyl.
11. A method according to claim 1 wherein said AG comprises an alkyl group from about 1 to 6 carbons.
12. A method according to claim 1 or 11 wherein said AG is branched, having the formula:



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wherein

$R_3$  through  $R_5$  are independently selected from the group consisting of hydrogen, alkyl, aryl, alcohol, amine, amido, nitro, ether, ester, ketone, imino, aldehyde, alkoxy, carbonyl, halogen, sulfur containing moiety and phosphorus containing moiety;

- 10 13. A method according to claim 12 wherein said AG is attached to said attachment linker via a  $(CH_2)_n$  group, wherein n is an integer from 0 to 4.
14. A method according to claim 12 wherein said AG is attached directly to said attachment linker.